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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,481	11/13/2000	Kyoichi Watanabe	SCH2000	9803

20786 7590 09/17/2003

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EXAMINER
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CRANE, LAWRENCE E

ART UNIT	PAPER NUMBER
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1623

6

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <b>09/712,481</b>	Applicant(s) <b>Watanabe et al.</b>	
	Examiner <b>L. E. Crane</b>	Group Art Unit <b>1623</b>	

**- THE MAILING DATE of this communication appears on the cover sheet beneath the correspondence address -**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **--01--** MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be filed after six months from the date of this communication.
- If the prior for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 USC §133).

### Status

- ☒ Responsive to communication(s) filed on **-06/12/01 (IDS) & 02/26/02 (IDS#2)-**.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- ☒ Claims **--1-55--** are pending in the application. Claims **-[]-** have been cancelled.
- Of the above claim(s) **--[]--** is/are withdrawn from consideration.
- ☐ Claim(s) **--[]--** is/are allowed.
- ☐ Claims **--[]--** are rejected.
- ☐ Claim(s) **--[]--** is/are objected to.
- ☒ Claims **--1-55--** are subject to restriction or election requirement.

### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on **-[]-** are ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on **-[]-** is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119(a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) **-[]-**.
- ☐ received in the national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: **-[]-**.

### Attachment(s)

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Information Disclosure Statement(s), PTO-1449, Paper No(s). <b>--04, 05--</b> | <input type="checkbox"/> Interview Summary, PTO-413                     |
| <input checked="" type="checkbox"/> Notice of Reference(s) Cited, PTO-892   | <input type="checkbox"/> Notice of Informal Patent Application, PTO-152 |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review, PTO-948                                  | <input type="checkbox"/> Other: <b>-[]-</b>                             |

U.S. Patent Trademark Office

### Office Action Summary

PTO-326 (Rev. 06/19/01)

S. N. 09/712,481

Paper No. **06**

Copy for **FILE** [ ] APPLICANT

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The oath or declaration is defective. A new oath or declaration in compliance with 37 C.F.R. §1.67(a) identifying this application by its Serial Number and filing date is required. See MPEP 602.01 and 602.02. The oath or declaration is defective because:

5 It does not identify the residence address of the second inventor.

No claims have been cancelled and no preliminary amendments filed as of the date of the instant Office action. Two (2) Information Disclosure Statements (IDSs) have been received with all cited references and made of record.

10 Claims 1-55 remain in the case.

Claim 1, 4, 6, 8-14, 17-20, 34, 36 and 38-40 are objected to because of the following informalities:

15 In claim 1 at line 5, the second chemical formula is technically incorrect. The heterocyclic ring should be amended to represent -- 3-pyrrolyl\*--. See also claims 4, 6, 9, 12, 18, 34, 36 and 38 wherein the identical error reoccurs.



20 In claim 8 at line 4, the 2'-substituent {  $R^6S(=O)_m$  } of the compound shown is technically incorrect. Because subsequent claims require formation of the 2'-substituent by displacement with, for example, thioacetate, the substituent should be --  $R^6-(C=O)-S-$  -- wherein  $R^6$  is  $CH_3$ . The present 2'-substituent incorrectly represents a sulfide, a sulfoxide or a sulfone substituent. See also claims 9-11, 12-14, 17-20 and 38-40 wherein the identical error reoccurs.

Appropriate correction is required.

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Restriction to one of the following inventions is required under  
35 U.S.C. §121:

I. Claims **1-2**, drawn to a method of making 2'-deoxy-L-nucleosides  
by contacting a 2'-O-thioacylated or a 2'-acylated nucleoside with  
5 tributyl tin hydride, classified in Class 536, subclass 027.110.

II. Claims **3-7**, drawn to a method of making 2'-deoxy-L-nucleosides  
by contacting a 2'-halonucleoside with hydrogenolysis conditions,  
classified in Class 536, subclass 027.110.

10 III. Claims **8-21, 45 and 53**, drawn to a method of making  
2'-deoxy-L-nucleosides by contacting a 2'-S-thioacylated nucleosides  
with Raney nickel, classified in Class 536, subclass 027.110.

15 IV. Claims **22-25 and 46**, drawn to a method of making 2'-deoxy-L-  
nucleosides by contacting an L-furanose with a 2'- $\alpha$ -(purinyl or  
pyrimidinyl)thio substituent with conditions promoting formation of a  
cyclonucleoside which is then subsequently desulfurized with Raney  
nickel, classified in Class 536, subclass 027.110.

20 V. Claims **26-31 and 50-51**, drawn to a method of making 2'-  
deoxy-L-nucleosides by contacting a 2'- $\beta$ -L-ketonucleoside with  
hydrazine plus hydroxide or other conditions which duplicate the results  
of a Wolf-Kischner reduction, classified in Class 536, subclass 027.110.

25 VI. Claims **32-41, 42 and 54-55**, drawn to a method of making  
2'-deoxy-L-nucleosides by a complex synthetic process wherein  
enantiomeric reduction of a 4', 5'-unsaturated intermediate or 4'-carbon  
epimerization of an alternative intermediate produces a  $\beta$ -L-nucleoside  
from an  $\alpha$ -L-nucleoside, classified in Class 536, subclass 027.110.

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VII. Claims **43**, drawn to a method of making 2'-deoxy- $\beta$ -L-purine nucleosides via base exchange by contacting a 2'- $\beta$ -L-deoxypyrimidine nucleoside with a purine, classified in Class 536, subclass 027.110.

5        Claims **44 and 47** link inventions **I, II and III** and will be examined with the elected invention to the extent to which they apply.

      Claims **48 and 52** link inventions **II and III** and will be examined with the elected invention to the extent to which they apply.

      Claims **49** links inventions **III and IV** and will be examined with the elected invention to the extent to which they apply.

10        The inventions are distinct, each from the other because of the following reasons:

      Inventions **I and II** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or  
15        they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

      Inventions **I and III** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they  
20        have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

      Inventions **I and IV** are unrelated. Inventions are unrelated if it can  
25        be shown that they are not disclosed as capable of use together, or they

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have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

5       Inventions **I and V** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis  
10 operation.

      Inventions **I and VI** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant  
15 case the inventions have different modes of chemical synthesis operation.

      Inventions **I and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions,  
20 or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

      Inventions **II and III** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or  
25 they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the

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instant case the inventions have different modes of chemical synthesis operation.

5       Inventions **II and IV** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

10       Inventions **II and V** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

15       Inventions **II and VI** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

20       Inventions **II and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

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Inventions **III and IV** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the  
5 instant case the inventions have different modes of chemical synthesis operation.

Inventions **III and V** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions,  
10 or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

Inventions **III and VI** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or  
15 they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

Inventions **III and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or  
20 they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

25 Inventions **IV and V** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions,



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or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

5       Inventions **IV and VI** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

10       Inventions **IV and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis  
15       operation.

      Inventions **V and VI** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the  
20       instant case the inventions have different modes of chemical synthesis operation.

      Inventions **V and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions,  
25       or they have different effects. (MPEP §§ 806.04 & 808.01). In the instant case the inventions have different modes of chemical synthesis operation.

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Inventions **VI and VII** are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP §§ 806.04 & 808.01). In the  
5 instant case the inventions have different modes of chemical synthesis operation.

Because these inventions are distinct for the reasons given above and they have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination  
10 purposes as indicated is proper.

A telephone call was made to Ms. Sherry L. Knowles on September 16, 2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the response to this requirement to be  
15 complete must include an election of the invention to be examined even though the requirement be traversed (37 C.F.R. §1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. §1.48(b) if one or more of the currently named inventors is no  
20 longer an inventor if at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. §1.48(b) and by the fee required under 37 C.F.R. §1.17(h).

Papers related to this application may be submitted to Group 1600  
25 via facsimile transmission(FAX). The transmission of such papers must conform with the notice published in the Official Gazette (1096 OG 30,

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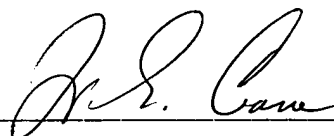
November 15, 1989). The telephone numbers for the FAX machines operated by Group 1600 are **(703) 308-4556** and **703-308-2724**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner L. E. Crane whose telephone number is **703-308-4639**. The examiner can normally be reached between 9:30 AM and 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson, can be reached at (703)-  
308-4624.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is **703-308-1235**.

LECrane:lec  
15 **09/16/03**



L. E. Crane, Ph.D., JD  
Patent Examiner  
Technology Center 1600

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